

Claims

1. A lubricative composition for industrial machinery and equipment, said composition comprising a base oil selected from mineral oils, fats and oils, synthetic
5 oils and mixtures of two or more of them, and at least one additive selected from the following components (A) to (D):

component (A):

(A-1) a phosphorus-containing carboxylic acid and/or (A-2) a thiophosphoric ester;

10 component (B): a dispersant viscosity index improver;

component (C):

the following component (C-1) and/or component (C-2):

component (C-1): at least one kind of a compound represented by the following formulas (1) to (3):



wherein R^1 is an alkyl group having 6 to 30 carbon atoms or an alkenyl group having 6 to 30 carbon atoms, R^2 is an alkyl group having 1 to 4 carbon atoms, X^1 is hydrogen, an alkyl group having 1 to 30 carbon atoms or an alkenyl group having 1 to 30 carbon atoms, and n is an integer of 1 to 4,



wherein R^1 is an alkyl group having 6 to 30 carbon atoms or an alkenyl group having 6 to 30 carbon atoms, R^2 is an alkyl group having 1 to 4 carbon atoms, Y^1 is an alkali metal or an alkali earth metal, n is an integer of 1 to 4, and m is 1 when Y^1 is an alkali metal and 2 when Y^1 is an alkali earth metal, and



wherein R^1 is an alkyl group having 6 to 30 carbon atoms or an alkenyl group having 6 to 30 carbon atoms, R^2 is an alkyl group having 1 to 4 carbon atoms, Z is a residue having a hydroxyl group removed from a polyhydric alcohol with two or more

valences, m is an integer of 1 or more, m' is an integer of 0 or more, m + m' is a valence number of Z, and n is an integer of 1 to 4,

component (C-2): a compound represented by the following formula (4):



5 wherein R³ is an alkyl group having 7 to 29 carbon atoms, an alkenyl group having 7 to 29 carbon atoms or a group represented by the formula (5):



wherein R⁴ is an alkyl group having 1 to 20 carbon atoms or hydrogen; and
component (D): an ester oiliness improver.

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2. The lubricative composition according to claim 1 as a gear oil composition, wherein the additive is at least one selected from the component (A) to component (C).

15 3. The lubricative composition according to claim 1 as a lubricating oil composition for paper machines, wherein the additive is at least one selected from the component (A) to component (C).

20 4. The lubricative composition according to claim 1 as a lubricating oil composition for slide guides, wherein the additive is at least one selected from the component (A) to component (C).

25 5. The lubricative composition according to claim 1 as a lubricating oil composition, wherein the additive comprises the phosphorus-containing carboxylic acid compound of the component (A-1) and the dispersant viscosity index improver of the component (B).

6. The lubricative composition according to claim 1 as a lubricating oil composition, wherein the additive comprises the thiophosphoric ester of the component (A-2) and the dispersant viscosity index improver of the component (B).

7. The lubricative composition according to claim 1 as a lubricating oil composition, wherein the additive comprises the ester oiliness improver of the component (D) which is an ester of a polyhydric alcohol and a fatty acid of monobasic acids.

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8. The lubricative composition according to claim 7, wherein the ester oiliness improver of the component (D) which is an ester of a polyhydric alcohol and a fatty acid of monobasic acids is any one selected from the following esters of (D-1) to (D-3):

(D-1): an ester of a polyhydric alcohol and an unsaturated fatty acid containing a partial ester with the degree of esterification of 1 and a partial ester with the degree of esterification of 2 or more;

(D-2): a whole ester of a polyhydric alcohol and a mixture of fatty acids, wherein the fatty acids are short-chained fatty acids and long-chained fatty acids; and

(D-3): an ester of a polyhydric alcohol and a branched saturated fatty acid containing a partial ester with the degree of esterification of 1 and a partial ester with the degree of esterification of 2 or more.

9. The lubricative composition according to claim 8, wherein the lubricating oil composition is a hydraulic oil.